REMARKS

Claims 1-20 are pending in this application. Attached hereto is a complete listing of all claims in the application, with their current status listed parenthetically. By this Response, no claims are amended, cancelled or withdrawn.

1st Rejection Under 35 U.S.C. § 103

In paragraph 2 of the Office Action, claims 1-4 and 6-9 stand rejected as unpatentable under 35 U.S.C. § 103(a) over U.S. patent 7,187,647 ("Gerakoulis") in view of U.S. Patent 7,099,375 ("Jones"). Applicant respectfully traverses this rejection.

In the Office Action, the Examiner states the rejection to the above claims as follows:

> "Regarding claims 1-2, 6-7, the claimed providing a ultra wideband device structured to transmit at a chip rate is disclosed by Gerakoulis by ultra wideband transceiver in UWB system.
> Gerakoulis does not disclose receiving a plurality of pulses at second chip rate and interpolating and converting second chip rate pulses to first chip rate. Jones discloses a chip rate invariant detector for use in wireless spread spectrum system that can accommodate two or more chip rates where the detector segments the signals and filters in order to have pulses in uniform sizes."

Applicant notes that a motivation to combine statement, mandated by the M.P.E.P. and emphatically stated in **bold** at the end of Margaret Focarino's May 3, 2007 Memorandum, **is completely missing in the above rejection. Nor does the rejection contain any cites to relevant sections of each reference.** Moreover, Applicant has closely reviewed both cited references, and finds that Gerakoulis does not explicitly teach "transmitting at a chip rate" nor does Jones teach or suggest "interpolating the received second chip rate pulses to the first chip rate." Instead Jones teaches "a chip rate invariant detector. . .which is seamless **to changes** in chip rate" (col. 6, lines 46-48). Changes in chip rate, as taught in Jones, **is not equivalent to** "interpolating the received second chip rate pulses to the first chip rate" as recited by Applicant.

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Therefore, Applicant respectfully requests the Examiner reconsider and withdrawal her rejection of independent claims 1and 6. Because claims 2-4 and 7-9 depend from claims 1 and 6, respectively, it is respectfully submitted that the rejection of claims 2-4 and 7-9 have been traversed by virtue of their dependency from claims 1 and 6, respectively. M.P.E.P. § 2143.03.

2nd Rejection Under 35 U.S.C. § 103

In paragraph 3 of the Office Action, claims 11-20 stand rejected as unpatentable under 35 U.S.C. § 103(a) over U.S. patent 7,027,425 ("Fullerton") in view of U.S. Patent 6,738,443 ("Bohnke"). Applicant respectfully traverses this rejection.

In the Office Action, the Examiner states the rejection to the above claims as follows:

> "Regarding claims 11-14, 19-20, the claimed generating a first and second data frame to transmit at first and second data rates is disclosed by Fullerton in system transmitting impulse radio signals at different data rates. [*sic*]
>
> Fullerton discloses all of the limitations except for the claimed either or both first and second frames comprised of ACG control, power level, ACG tuning and synchronization sections. Bohnke discloses a preamble structure in communications between an OFDM transmitter and receiver. The preamble includes fields for automatic gain control and timing synchronization. The automatic gain control is adjusted. **See column 1, lines 25-36, column 2, lines 52-58.** Bohnke discloses optimization of these fields regarding the time domain signal (power) properties (Figure 7). **See column 3, lines 11-19**. At the time the invention was made it would have been obvious to modify Fullerton to include the above preamble fields of Bohnke. One of ordinary skill in the art would be motivated to do so for improve auto-correlation properties of the receiver synchronization."

Regarding Fullerton, again the Examiner fails to provide any cites that support her statements. **In fact, a reading of Fullerton reveals no teaching of "generating a first data frame, constructed to transmit data at a first data rate and generating a second data frame, constructed to transmit data, at a second data rate" as recited in Applicant's claim 11.**

Instead, Fullerton teaches that "signal strength and data rate are related in impulse radios" (col. 16, lines 65-66). This teaching is in the context of Fullerton's teaching of "where to move

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in order to maintain the data rate requirements" (col. 14, lines 8-10, and FIG. 10). But, Fullerton contains no teaching of "generating a first data frame, constructed to transmit data at a first data rate and generating a second data frame, constructed to transmit data, at a second data rate" as recited in Applicant's claim 11.

Regarding the teachings of Bohnke: column 1, lines 25-36; column 2, lines 52-58; and column 3, lines 11-19, as cited by the Examiner, do appear to teach automatic gain control and synchronization, however, contrary to the Examiner's assertion, Bohnke does not teach a power level section, or a automatic gain control tuning section **(this claim element is not mentioned at all by the Examiner).**

Specifically, Bohnke teaches an OFDM transmitter designed for transmitting a synchronization preamble (col. 3, line 66 to col. 4, line 5). Regarding power levels, Bohnke states:

> "For OFDM (or in general multicarrier signals) the signal envelope fluctuation (named **Peak-to-Average-Power-Ratio=PAPR**) is of great concern. A large PAPR result [*sic*] in poor transmission (due to nonlinear distortion effects of the power amplifier) and other signal limiting components in the transmission system (e.g. limited dynamic range of the AD converter). **For synchronization sequences it is even more desirable to have signals with a low PAPR and low dynamic range in order to accelerate the receiver AGC (automatic gain control) locking and adjusting the reference signal value for the A/D converter** (the whole dynamic range of the incoming signal should be covered by the A/D converter resolution without any overflow/underflow)" [col. 5, line 64 to col. 6, line 9]. **(emphasis** added)

Thus, Bohnke teaches the desireability of signals having a low Peak-to-Average-Power-Ratio. However, Bohnke does not teach "wherein either of, or both the first data frame and the second data frame are comprised of. . . a power level section." And also, **Bohnke is completely silent to any teaching of "an automatic gain control tuning section," as recited in independent claim 11.**

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Therefore, Applicant respectfully requests the Examiner reconsider and withdrawal her rejection of independent claim 11. Because claims 12-20 depend from claim 11, it is respectfully submitted that the rejection of claims 12-20 have been traversed by virtue of their dependency from claim 11. M.P.E.P. § 2143.03.

Conclusion

Applicant believes that this Response has addressed all items in the Office Action and now places the application in condition for allowance. Accordingly, favorable reconsideration and allowance of claims 1-20 at an early date is solicited. Should any issues remain unresolved, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

February 26, 2008

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Date

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